

Form PTO-1449

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 220002059710

Application Number 09/822,965

Applicant

Thomas INNERARITY and Jan BOREN

Filing Date: March 29, 2001

Group Art Unit To Be Assigned

Mailing Date: June 12, 2001

## U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
as	1.	07/28/1987	4,683,195	Mullis et al.	435	6	
	2.	07/28/1987	4,683,202	Mullis	435	91.2	
	3.	08/18/1992	5,139,941	Muzyczka et al.	435	456	
	4.	09/27/1994	5,350,671	Houghton et al.	435	5	
	5.	03/21/1995	5,399,346	Anderson et al.	424	93.21	
	6.	12/03/1996	5,580,859	Felgner et al.	514	44	
	7.	08/12/1997	5,656,465	Panicali et al.	435	456	
	8.	09/30/1997	5,672,344	Kelley et al.	424	93.2	
as	9.	12/22/1998	5,851,529	Guber et al.	424	188.1	

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
as	10.	09/13/1984	WO 84/03506	PCT			
	11.	09/13/1984	WO 84/03564	PCT			
	12.	02/09/1995	WO 95/04064	PCT			
	13.	12/10/1986	0 200 362 B1	Europe			
	14.	12/17/1986	0 201 184 B1	Europe			
as	15.	07/22/1987	0 229 701 B1	Europe			

## OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title
as	16.	<u>Antibodies: A Laboratory Manual.</u> (1988) Harlow, E. and D. Lane, Eds. (Table of Contents).
as	17.	<u>Arnold, K. et al., (1992). "Lipoprotein-Receptor Interactions" in Lipoprotein Analysis. A Practical Approach.</u> Converse, C. A. and E. R. Skinner, Eds. Oxford University Press: Oxford. pp. 145-168.

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ay	18.	Basu, S. et al. (1976). "Degradation of Cationized Low Density Lipoprotein and Regulation of Cholesterol Metabolism in Homozygous Familial Hypercholesterolemia Fibroblasts" <i>Proc. Natl. Acad. Sci. USA</i> 73:3178-3182.
	19.	Borén, J. et al. (1996). "A Simple and Efficient Method for Making Site-Directed Mutants, Deletions, and Fusions of Large DNA Such as P1 and BAC Clones," <i>Genome Res.</i> 6:1123-1130.
	20.	Borén, J. et al. (1998). "Identification of the Low Density Lipoprotein Receptor-Binding Site in Apolipoprotein B100 and the Modulation of its Binding Activity by the Carboxyl Terminus in Familial Defective apo-B100," <i>J. Clin. Invest.</i> 101:1084-1093.
	21.	Camejo, G. et al. (1980). "Factors Modulating the Interaction of LDL with an Arterial Lipoprotein Complexing Proteoglycan: The Effect of HDL," <i>Acta. Med. Scand. Suppl.</i> 642:159-164.
	22.	Camejo, G. et al. (1988). "Identification of Apo B-100 Segments Mediating the Interaction of Low Density Lipoproteins with Arterial Proteoglycans," <i>Arteriosclerosis</i> 8:368-377.
	23.	Camejo, G. et al. (1993). "Binding of Low Density Lipoproteins by Proteoglycans Synthesized by Proliferating and Quiescent Human Arterial Smooth Muscle Cells," <i>J. Biol. Chem.</i> 268:14131-14137.
	24.	Capecchi, M. (1989). "Altering the Genome by Homologous Recombination," <i>Science</i> 244:1288-1292.
	25.	Cardin, A. et al. (1987). "Physical-Chemical Interaction of Heparin and Human Plasma Low-Density Lipoproteins," <i>Biochemistry</i> 26:5513-5518.
	26.	Cardoso, L.E. et al. (1994). "Glycosaminoglycan Fractions from Human Arteries Presenting Diverse Susceptibilities to Atherosclerosis Have Different Binding Affinities to Plasma LDL," <i>Arterioscler. Thromb.</i> 14:115-124.
	27.	Chang, Y. et al. (1983). "Proteoglycans Synthesized by Smooth Muscle Cells Derived from Monkey ( <i>Macaca nemestrina</i> ) Aorta," <i>J. Biol. Chem.</i> 258:5679-5688.
	28.	Christner, J.E. et al. (1990). "A Competitive Assay of Lipoprotein:Proteoglycan Interaction Using a 96-Well Microtitration Plate," <i>Analytical Biochem.</i> 184:388-394.
	29.	Corsini, A. et al. (1987). "Receptor Binding Activity of Lipid Recombinants of Apolipoprotein B-100 Thrombolytic Fragments" <i>J. Lipid Res.</i> 28:1410-1423.
	30.	Costa, G. et al. (1994). "Polishing with T4 or <i>Pfu</i> Polymerase Increases the Efficiency of Cloning of PCR Fragments," <i>Nucleic Acids Res.</i> 22:2423
ay	31.	Deng, W. et al. (1992). "Site-Directed Mutagenesis of Virtually Any Plasmid by Eliminating a Unique Site," <i>Anal. Biochem.</i> 200:81-88.

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02	32.	Edwards, I. et al. (1993). "Lipoprotein Lipase Enhances the Interaction of Low Density Lipoproteins with Artery-Derived Extracellular Matrix Proteoglycans," <i>J. Lipid Res.</i> 34:1155-1163.
	33.	Eisenberg, S. et al. (1992). "Lipoprotein Lipase Enhances Binding of Lipoproteins to Heparan Sulfate on Cell Surfaces and Extracellular Matrix," <i>J. Clin. Invest.</i> 90:2013-2021.
	34.	Gaffney, D. et al. (1995). "Independent Mutations at Codon 3500 of the Apolipoprotein B Gene Are Associated with Hyperlipidemia," <i>Arterioscler. Thromb. Vasc. Biol.</i> 15:1025-1029.
	35.	Galis, Z. et al. (1993). "Co-Localization of Aortic Apolipoprotein B and Chondroitin Sulfate in an Injury Model of Atherosclerosis," <i>Am J. Pathol.</i> 142:1432-1438.
	36.	Geysen, H.M. et al. (1984). "Use of Peptide Synthesis to Probe Viral Antigens for Epitopes to a Resolution of a Single Amino Acid," <i>Proc. Natl. Acad. Sci. USA</i> 81:3998-4002.
	37.	Goldstein, J. et al. (1985). "Receptor-Mediated Endocytosis: Concepts Emerging from the LDL Receptor System," <i>Annu. Rev. Cell Biol.</i> 1:1-39.
	38.	Hirose, N. et al. (1987). "Isolation and Characterization of Four Heparin-Binding Cyanogen Bromide Peptides of Human Plasma Apolipoprotein B," <i>Biochemistry</i> 26:5505-5512.
	39.	Hobbs, H. et al. (1992). "Molecular Genetics of the LDL Receptor Gene in Familial Hypercholesterolemia," <i>Hum. Mutat.</i> 1:445-466.
	40.	Hoff, H. et al. (1986). "Plasma Low Density Lipoprotein Accumulation in Aortas of Hypercholesterolemic Swine Correlates with Modifications in Aortic Glycosaminoglycan Composition," <i>Atherosclerosis</i> 61:231-236.
	41.	Hoff, H. et al. (1983). "Apolipoprotein B Localization in Coronary Atherosclerotic Plaques from Cynomolgus Monkeys," <i>Artery</i> 12:104-116.
	42.	Hu, G. (1993). "DNA Polymerase-Catalyzed Addition of Nontemplated Extra Nucleotides to the 3' End of a DNA Fragment," <i>DNA and Cell Biology</i> 12:763-770.
	43.	Hurt, E. et al. (1987). "Effect of Arterial Proteoglycans on the Interaction of LDL with Human Monocyte-Derived Macrophages," <i>Atherosclerosis</i> 67:115-126.
	44.	Hurt, E. et al. (1990). "Interaction of LDL with Human Arterial Proteoglycans Stimulates its Uptake by Human Monocyte-Derived Macrophages," <i>J. Lipid Res.</i> 31:443-454.
	45.	Hurt-Camejo, E. et al. (1997). "Cellular Consequences of the Association of apoB Lipoproteins with Proteoglycans," <i>Arterioscler Thromb Vasc Biol.</i> 17:1011-1017.
02	46.	Innerarity, T. et al. (1987). "Familial Defective Apolipoprotein B-100: Low Density Lipoproteins with Abnormal Receptor Binding," <i>Proc. Natl. Acad. Sci. USA</i> 84:6919-6923.

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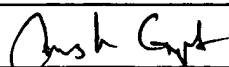
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**OTHER DOCUMENTS**

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00	47.	Innerarity, T. et al. (1990). "Familial Defective Apolipoprotein B-100: A Mutation of Apolipoprotein B that Causes Hypercholesterolemia," <i>J. Lipid Res.</i> 31:1337-1349.
00	48.	Ismail, N. et al. (1994). "Lipoprotein-Proteoglycan Complexes from Injured Rabbit Aortas Accelerate Lipoprotein Uptake by Arterial Smooth Muscle Cells," <i>Atherosclerosis</i> 105:79-87.
	49.	Johnstone, A. et al. (1996). "Purification of Immunoglobulins," <i>Immunochemistry in Practice</i> . Blackwell Scientific Publications; Oxford. p. 69.
	50.	Knott, T. et al (1985). "Human Apolipoprotein B: Structure of Carboxyl-Terminal Domains, Sites of Gene Expression, and Chromosomal Localization," <i>Science</i> . 230:37-43.
	51.	Knott, T. et al. (1986). "Complete Protein Sequence and Identification of Structural Domains of Human Apolipoprotein B," <i>Nature</i> 323:734-738.
	52.	Kunkel, Thomas A. (1985). "Rapid and Efficient Site-Specific Mutagenesis Without Phenotypic Selection," <i>Proc. Natl. Acad. Sci. U.S.A.</i> 82:488-492.
	53.	Lindén, T. et al. (1989). "Affinity of LDL to a Human Arterial Proteoglycan Among Male Survivors of Myocardial Infarction," <i>Eur. J. Clin. Invest.</i> 19:38-44.
	54.	Linton, M. et al. (1993). "Transgenic Mice Expressing High Plasma Concentrations of Human Apolipoprotein B100 and Lipoprotein (a)" <i>J. Clin. Invest.</i> 92:3029-3037.
	55.	Mahley, R. et al. (1977). "Inhibition of Lipoprotein Binding to Cell Surface Receptors of Fibroblasts Following Selective Modification of Arginyl Residues in Arginine-Rich and B Apoproteins," <i>J. Biol Chem</i> 252:7279-7287.
	56.	Mahley, R. et al. (1979). "Interaction of Plasma Lipoproteins Containing Apolipoproteins B and E with Heparin and Cell Surface Receptors," <i>Biochem. Biophys. Acta.</i> 575:81-91.
	57.	McCormick, S. et al. (1994). "Expression of P1 DNA in Mammalian Cells and Transgenic Mice," <i>Genet. Anal. Tech. Appl.</i> 11:158-164.
	58.	Merrilees, M.J. et al. (1990). "Glycosaminoglycan Synthesis by Smooth Muscle Cells of Differing Phenotype and their Response to Endothelial Cell Conditioned Medium," <i>Atherosclerosis</i> 81:245-254.
	59.	<u>Methods in Enzymology</u> (1979). Colowick, S. and N. Kaplan, Eds. Academic Press. (Table of Contents).
	60.	Milne, R. et al. (1983). "Characterization of Monoclonal Antibodies Against Human Low Density Lipoprotein," <i>Arteriosclerosis</i> 3:23-30.
	61.	<u>Molecular Cloning: A Laboratory Manual</u> . (1989). Second Edition. J. Sambrook et al., Eds. Cold Spring Harbor Laboratory Press: Cold Spring Harbor. (Table of Contents).
00	62.	Mullis, K.B. et al. (1987). "Specific Synthesis of DNA <i>In Vitro</i> Via a Polymerase-Catalyzed Chain Reaction" <i>Methods in Enzymology</i> 155:335-350.
00	63.	Nelson, M. et al. (1992). "Use of DNA Methyltransferase/Endonuclease Enzyme Combinations for Megabase Mapping of Chromosomes" <i>Methods Enzymol.</i> 216:279-303.

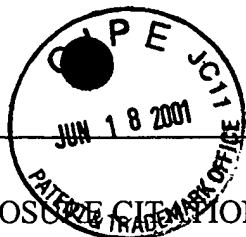
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as	64.	Nivelstein-Post, P. et al. (1994). "An Ultrastructural Study of Lipoprotein Accumulation in Cardiac Valves of the Rabbit" <i>Arterioscler. Thromb.</i> 14:1151-1161.
as	65.	<u>Nucleic Acid Hybridisation. A Practical Approach.</u> (1985). Hames, B.D. & S. J. Higgins, Eds. IRL Press. (Table of Contents).
as	66.	<u>Oligonucleotide Synthesis. A Practical Approach.</u> (1984). Gait, M.J. Ed., IRL Press. (Table of Contents).
as	67.	Olsson, U. et al. (1994). "Possible Functional Interactions of Apolipoprotein B-100 Segments that Associate with Cell Proteoglycans and the ApoB/E Receptor," (1997) <i>Arterioscler. Throm. Vasc. Biol.</i> 17:149-155.
as	68.	Paananen, K. et al. (1994). "Proteolysis and Fusion of Low Density Lipoprotein Particles Independently Strengthen their Binding to Exocytosed Mast Cell Granules," <i>J. Biol. Chem.</i> 269:2023-2031.
as	69.	<u>PCR Technology.</u> (1989). Erlich, H.A. Ed. Stockton Press. (Table of Contents).
as	70.	Pentikäinen, M.O. et al. (1997). "The Proteoglycan Decorin Links Low Density Lipoproteins with Collagen Type I," <i>J. Biol. Chem.</i> 272:7633-7638.
as	71.	<u>Protein Purification: Principles and Practice.</u> 2nd Edition. Scopes, R.K., Ed. (1987) Springer-Verlag. (Table of Contents).
as	72.	Pullinger, C. et al. (1995). "Familial Ligand-Defective Apolipoprotein B" <i>J. Clin. Invest.</i> 95:1225-1234.
as	73.	Radhakrishnamurthy, B. et al. (1990). "Arterial Wall Proteoglycans - Biological Properties Related to Pathogenesis of Atherosclerosis," <i>Eur. Heart J.</i> 11(Suppl E):148-157.
as	74.	Ross, R. (1995). "Cell Biology of Atherosclerosis," <i>Annu. Rev. Physiol.</i> 57:791-804.
as	75.	Saiki, R. et al. (1988). "Primer-Directed Enzymatic Amplification of DNA with a Thermostable DNA Polymerase," <i>Science</i> 239:487-491.
as	76.	Schönherr, E. et al. (1993). "Platelet-Derived Growth Factor and Transforming Growth Factor- $\beta$ 1 Differentially Affect the Synthesis of Biglycan and Decorin by Monkey Arterial Smooth Muscle Cells," <i>Arterioscler. Thromb.</i> 13:1026-1036.
as	77.	Schönherr, E. et al., (1991). "Effects of Platelet-Derived Growth Factor and Transforming Growth Factor- $\beta$ 1 on the Synthesis of a Large Versican-Like Chondroitin Sulfate Proteoglycan by Arterial Smooth Muscle Cells," <i>J. Biol. Chem.</i> 266:17640-17647.
as	78.	Steele, R. et al. (1987). "Artery Wall Derived Proteoglycan-Plasma Lipoprotein Interaction: Lipoprotein Binding Properties of Extracted Proteoglycans," <i>Atherosclerosis</i> 65:51-62.
as	79.	van Barlingen, H.H. et al. (1996). "Lipoprotein Lipase-Enhanced Binding of Human Triglyceride-Rich Lipoproteins to Heparan Sulfate: Modulation by Apolipoprotein E and Apolipoprotein C," <i>Journal of Lipid Res.</i> 37:754-763.

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ay	80.	Vandeyar, M.A. et al., (1988). "A Simple and Rapid Method for the Selection of Oligodeoxynucleotide-Directed Mutants," <i>Gene</i> 65:129-133.
	81.	Walton, K. et al. (1968). "Histological and Immunofluorescent Studies on the Evolution of the Human Atheromatous Plaque," <i>J. Atheroscler. Res.</i> 8:599-624.
	82.	Weiner, M. et al. (1994). "Site-Directed Mutagenesis of Double-Stranded DNA by the Polymerase Chain Reaction," <i>Gene</i> 151:119-123.
	83.	Weisgraber, K. et al. (1978). "Role of the Lysine Residues of Plasma Lipoproteins in High Affinity Binding to Cell Surface Receptors on Human Fibroblasts," <i>J. Biol. Chem.</i> 253:9053-9062.
	84.	Weisgraber, K. et al. (1986). "Human Apolipoprotein E: Determination of the Heparin Binding Sites of Apolipoprotein E3," <i>J. Biol. Chem.</i> 261:2068-2076.
	85.	Weisgraber, K. et al. (1987). "Human Apolipoprotein B-100 Heparin-Binding Sites," <i>J. Biol. Chem.</i> 262:11097-11103.
	86.	Williams, K.J. et al. (1995). "The Response-to-Retention Hypothesis of Early Atherogenesis," <i>Arterioscler. Thromb. Vasc Biol.</i> 15:551-561.
ay	87.	Yao, Z. et al. (1992). "Elimination of Apolipoprotein B48 Formation in Rat Hepatoma Cell Lines Transfected with Mutant Human Apolipoprotein B cDNA Constructs," <i>J. Biol. Chem.</i> 267:1175-1182.

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